

ECM-K57/Z157

SERVICE MANUAL

US Model
E Model



ECM-K57



ECM-Z157

SPECIFICATIONS

(ECM-K57)

General
Type Electret condenser microphone
Microphone output plug L-shaped miniplug
Dimensions 36 x 47 x 145 mm (w/h/d)
(1 7/16 x 1 7/8 x 5 3/4 inches)
Weight Approx. 70g (2.47oz) (including battery)
Supplied accessories Sony battery SUM-3(NS) (1)

Performance

Frequency response 150-12,000 Hz
Output impedance 400Ω ± 30%
Output level (deviation ± 4 dBm)

	Effective output level ^{*1}	Signal to noise ratio ^{*2}
Uni-directional	- 46 dBm	More than 62 dB
Omni-directional	- 47 dBm	More than 59 dB

^{*1} 0 dBm = 1 mW/Pa, 1,000 Hz ^{*2} 1,000 Hz • 1 Pa
1 Pa = 10 μ bar = 94 dB SPL

Power requirements

Normal operating voltage: 1.5 V
Battery life Approx. 1500 hours of continuous use, using Sony SUM-3(NS) battery
Maximum sound pressure input level^{*3}
Uni/omni-directional: more than 110 dB SPL
^{*3} The mean value is taken and converted to the equivalent input sound level. 0 dB SPL = 2 × 10⁻⁵ Pa
Environmental temperatures 0°C to +60°C (+32°F to +140°F) for operation

(ECM-Z157)

General
Type Electret condenser microphone
Microphone output plug L-shaped miniplug
Dimensions 36 x 47 x 145 mm (w/h/d)
(1 7/16 x 1 7/8 x 5 3/4 inches)
Weight Approx. 75 g (2.65 oz) (including battery)
Supplied accessories Carrying case (1)
Sony battery SUM-3(NS) (1)

Performance

Frequency response Narrow angle: 300-10,000 Hz
Uni-directional: 150-12,000 Hz
Omni-directional: 150-12,000 Hz
Output impedance 400Ω ± 30%
Output level (deviation ± 4 dBm)

	Effective output level ^{*1}	Signal to noise ratio ^{*2}
Narrow angle	- 34 dBm	More than 60 dB
Uni-directional	- 46 dBm	More than 62 dB
Omni-directional	- 47 dBm	More than 59 dB

^{*1} 0 dBm = 1 mW/Pa, 1,000 Hz ^{*2} 1,000 Hz • 1 Pa
1 Pa = 10 μ bar = 94 dB SPL

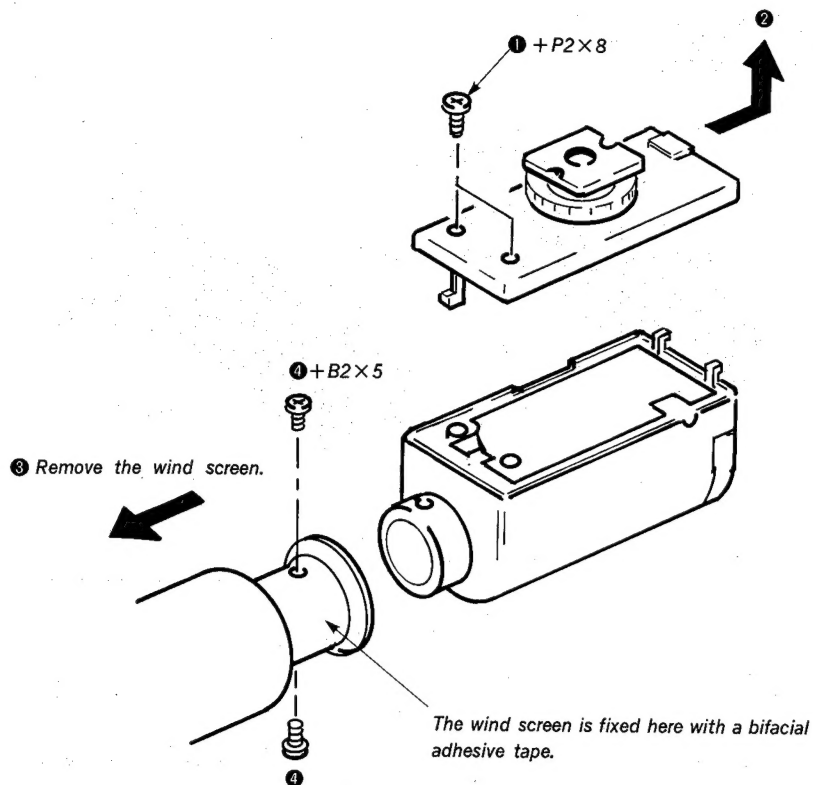
Power requirements

Normal operating voltage: 1.5 V
Battery life Approx. 800 hours of continuous use, using Sony SUM-3(NS) battery
Maximum sound pressure input level^{*3}
Narrow angle: more than 100 dB SPL
Uni/omni-directional: more than 110 dB SPL
^{*3} The mean value is taken and converted to the equivalent input sound level. 0 dB SPL = 2 × 10⁻⁵ Pa
Environmental temperatures 0°C to +60°C (+32°F to +140°F) for operation



ELECTRET CONDENSER MICROPHONE
SONY®

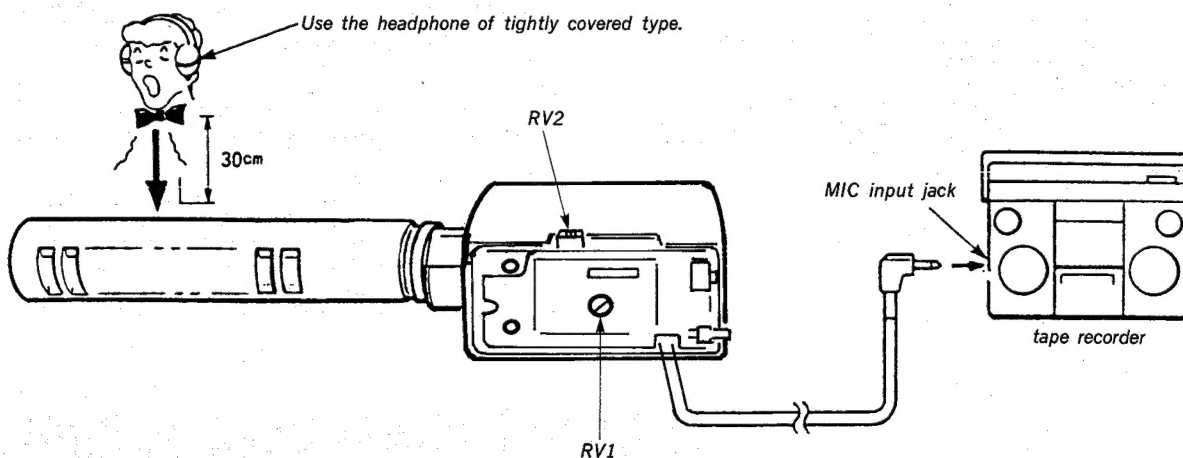
CASE REMOVAL



DIRECTIVITY ADJUSTMENT

Make this adjustment in replacement of Microphone capsule Assy, Q1, R3, R4 and R5.

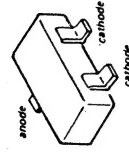
1. Set RV2 to the narrow directivity ∞ .
2. Connect the tape recorder have attached to MIC input jack.
3. Make voice in the direction at a right angle against capsule.
4. Adjust RV1 by the use of an adjusting driver insulated so as to make the minimum output from headphone output.



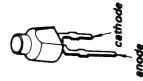
2SC2712G



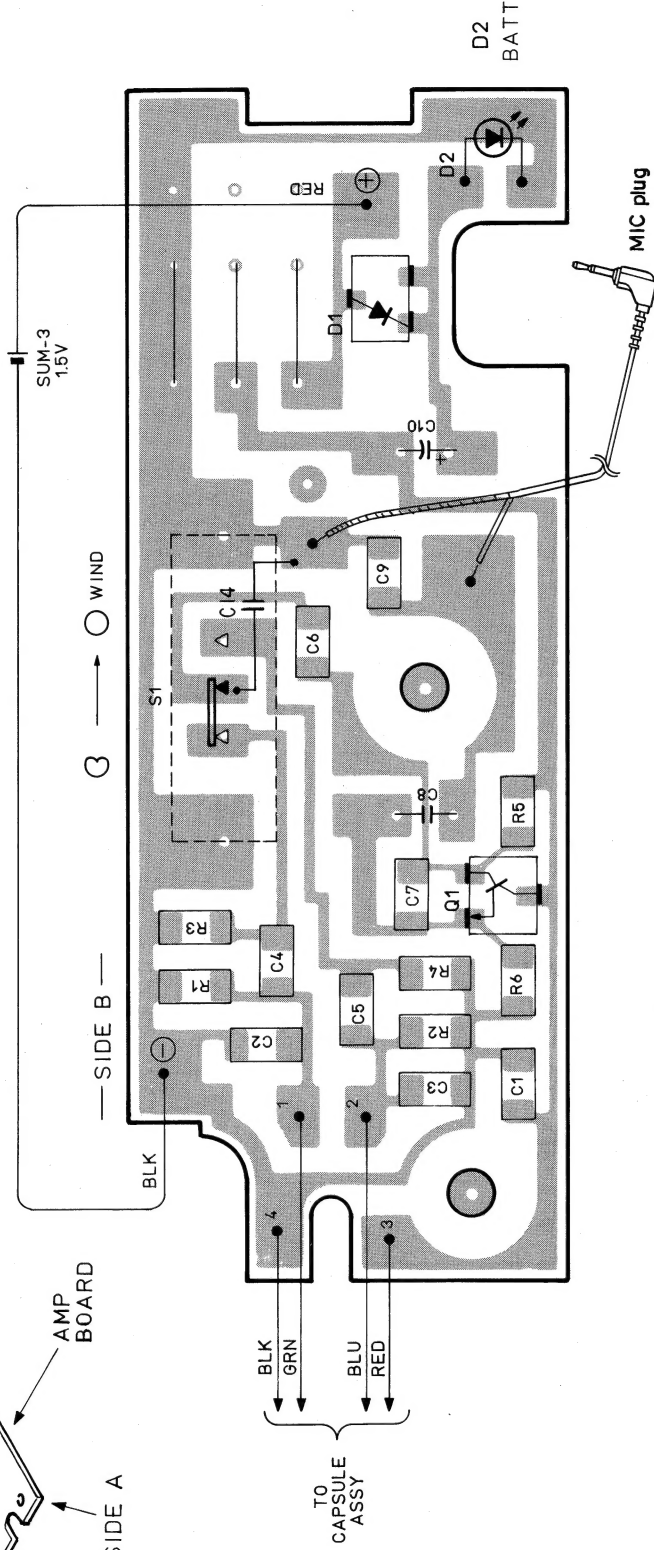
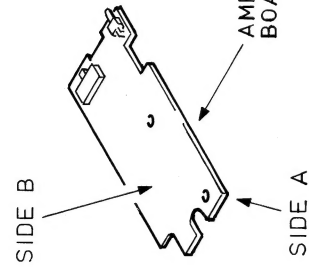
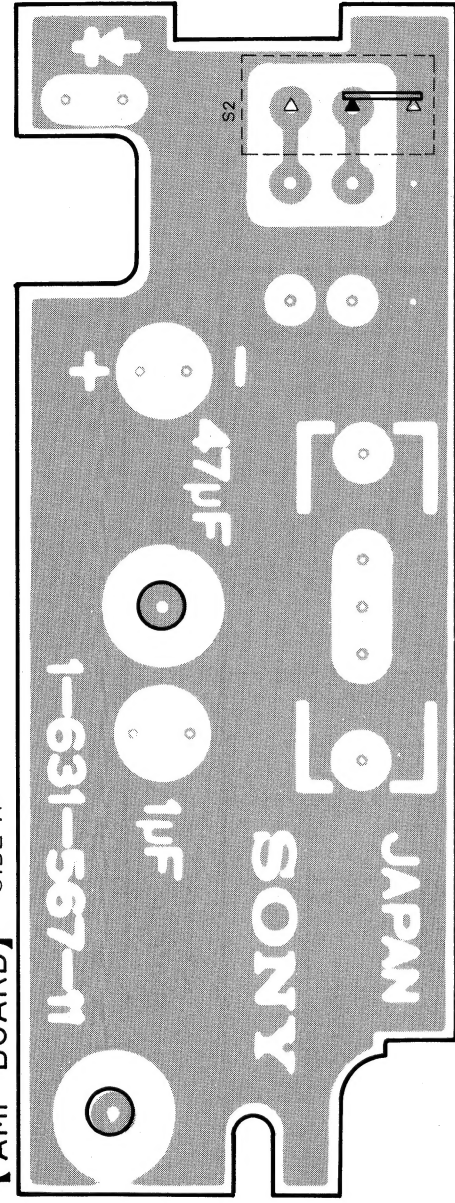
1SS181



TLR226



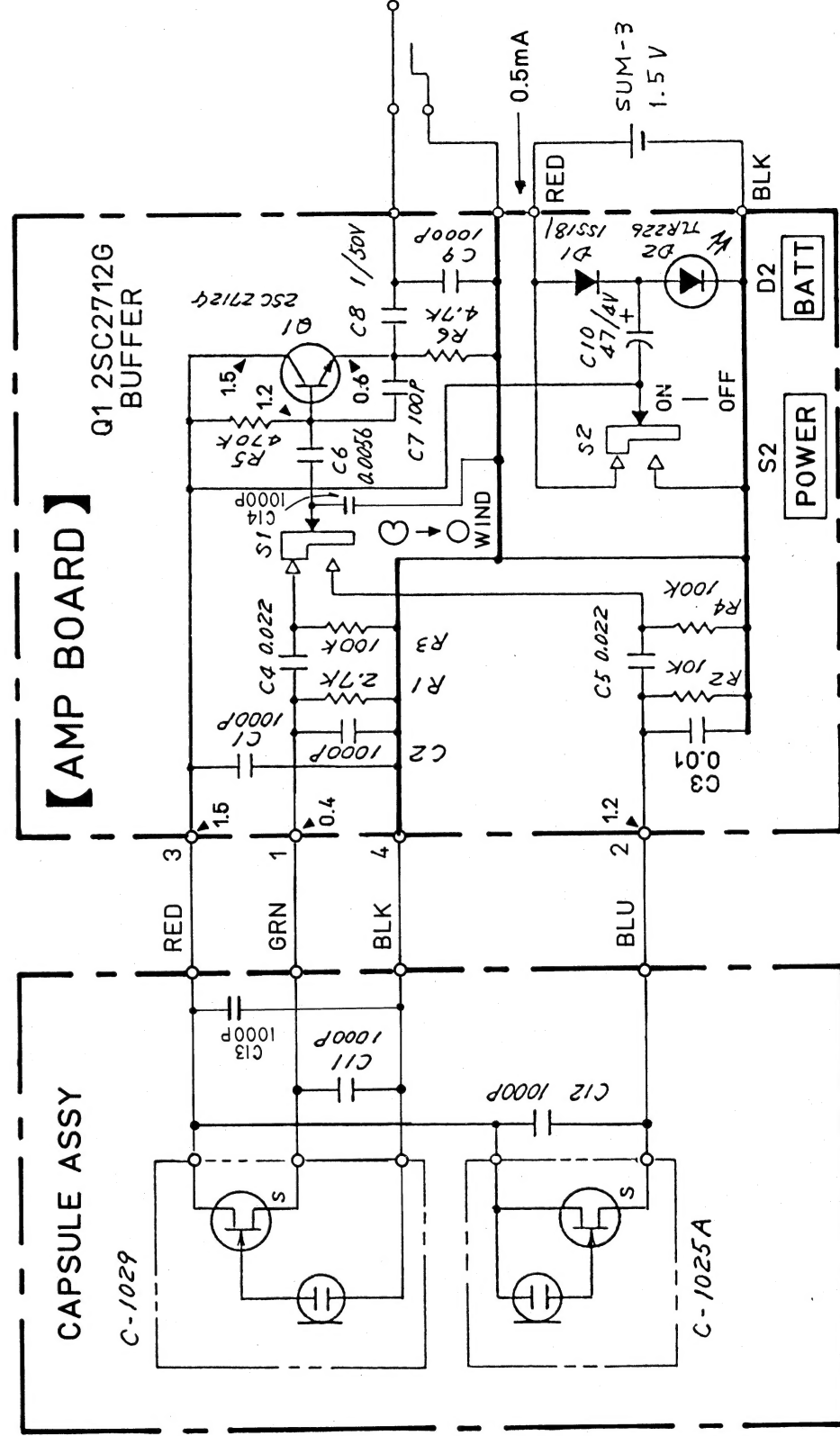
【AMP BOARD】—SIDE A—



ECM-K57/Z157

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SCHEMATIC DIAGRAM —ECM-K57—



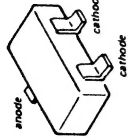
Note:

- All capacitors are in μF unless otherwise noted. pF : μF
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10M Ω digital multimeter.

2SC2712G



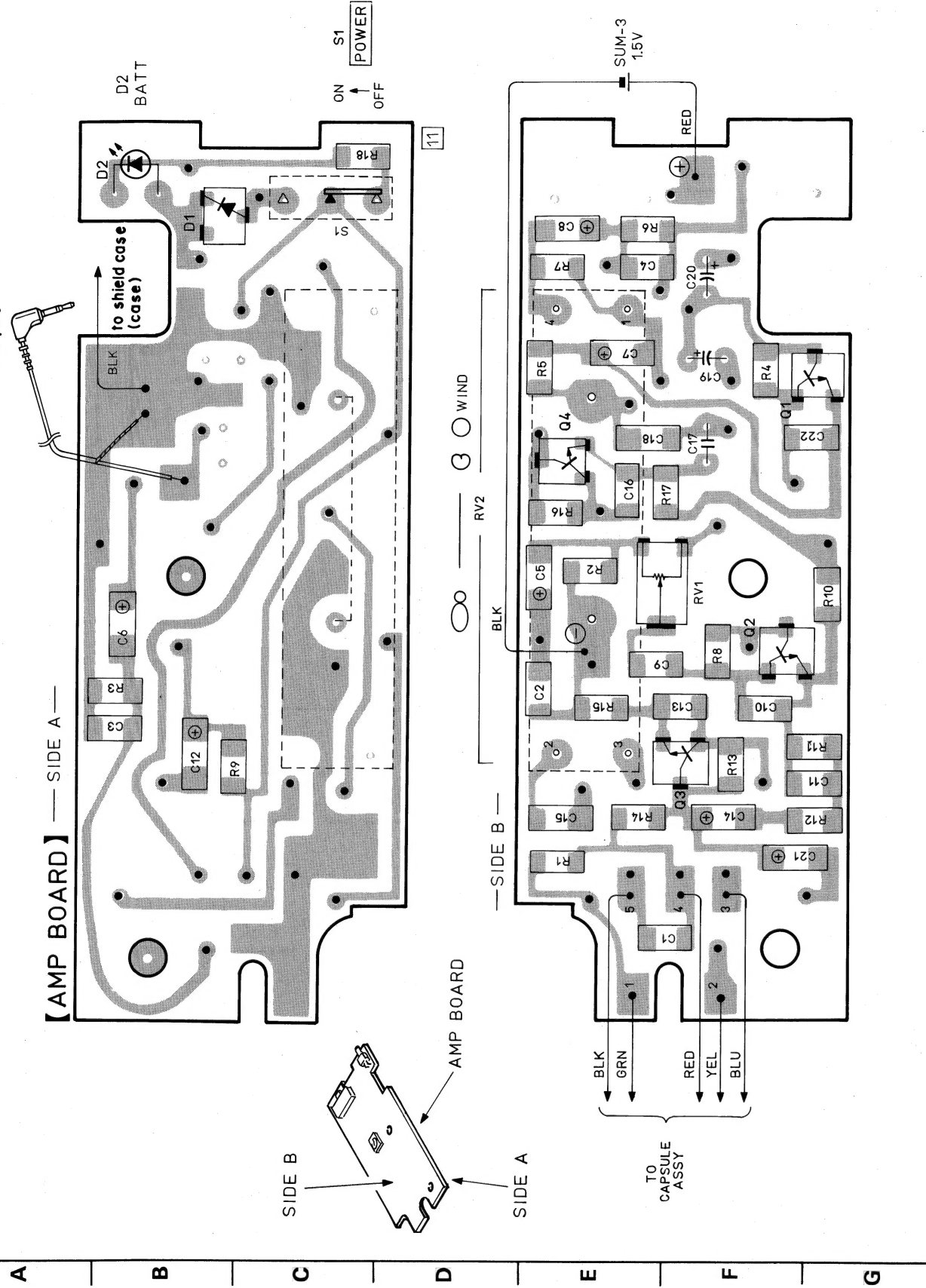
1SS181



TLR226



1 2 3 4 5 6 7 8 9

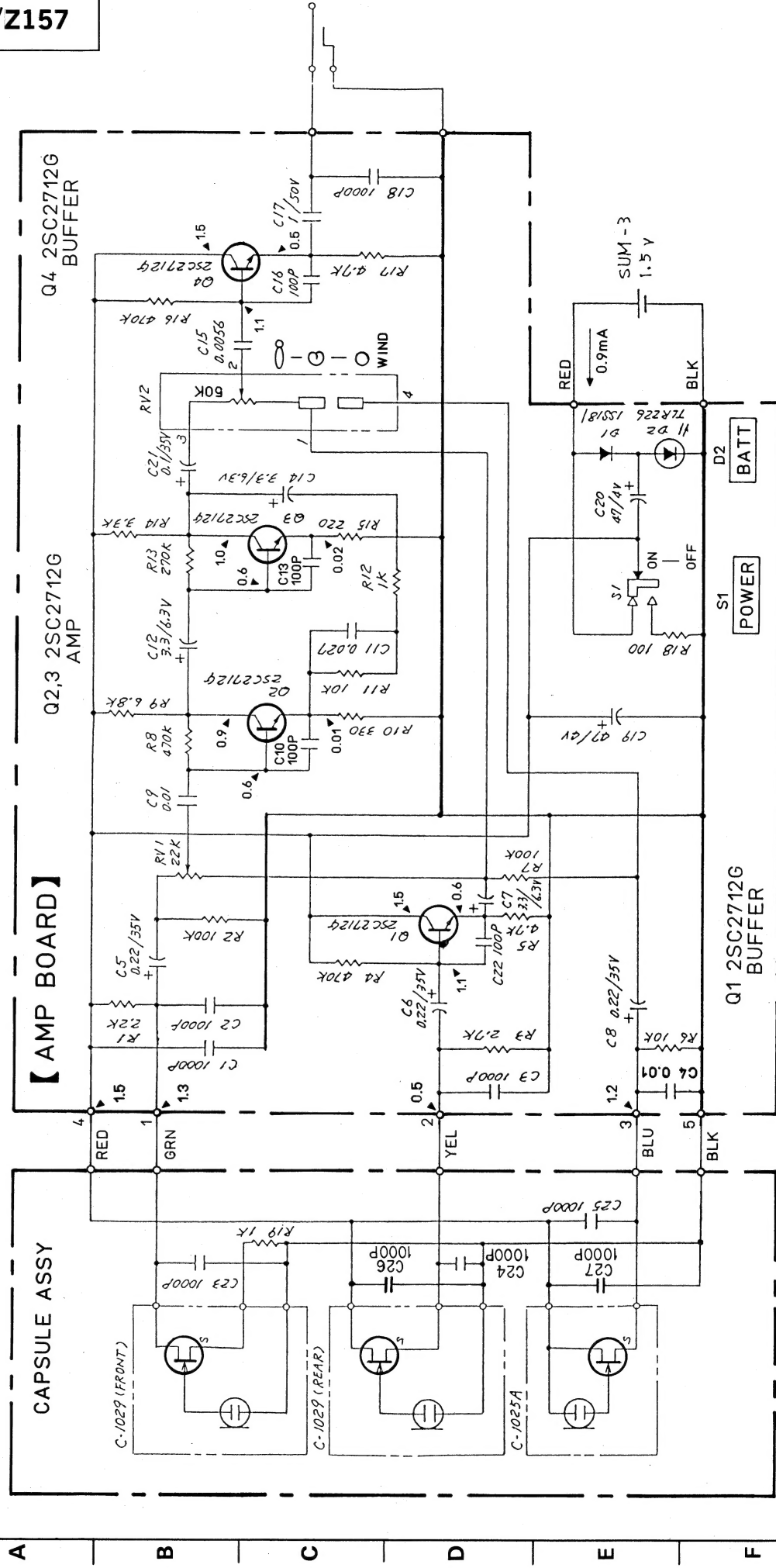


ECM-K57/Z157

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SCHEMATIC DIAGRAM — ECM-Z157 —

1 2 3 4 5 6 7 8 9 10



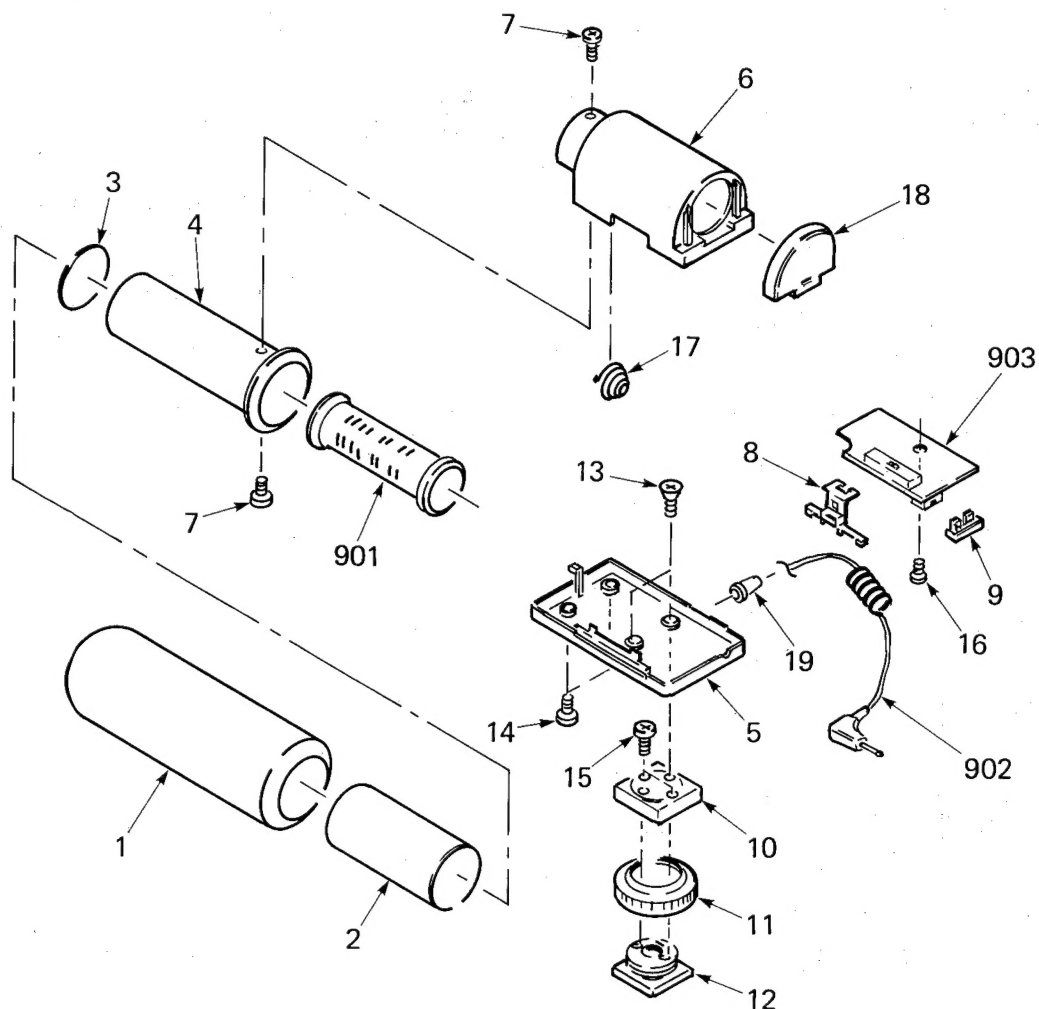
Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10M Ω digital multimeter.

EXPLODED VIEW AND PARTS LIST

NOTE:

- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



Ref. NO.	Part NO.	Description
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1	2-537-340-01	WINDSCREEN
2	3-831-441-XX	SCREEN, SIDE
3	3-831-441-XX	SCREEN, TOP
4	2-537-344-01	CASE, MICROPHONE
5	2-537-377-01	CHASSIS
6	X-2533-821-1	CASE ASSY (ECM-K57)
	X-2537-309-1	CASE ASSY (ECM-Z157)
7	4-908-792-51	SCREW (B2×5), TAPPING, P1
8	2-537-369-01	KNOB (VOLUME)
9	2-537-370-01	KNOB (SWITCH)
10	2-533-691-01	DAMPER, LINING
11	2-533-369-01	KNOB, FIXED
12	2-533-697-01	HOLDER, SHOE

Ref. NO.	Part NO.	Description
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13	7-621-559-20	SCREW +K2.6×4
14	7-685-105-19	SCREW +P2×8 TYPE2 NON-SLIT
15	7-685-104-21	SCREW +P2×6 TYPE2 SLIT
16	7-685-103-19	SCREW +P2×5 TYPE2 SLIT
17	3-578-236-00	SPRING
18	X-2537-307-1	COVER ASSY, BATTERY
19	2-537-341-01	BUSHING
901	X-2533-820-1	CAPSULE ASSY (ECM-K57)
	X-2537-308-1	CAPSULE ASSY (ECM-Z157)
902	1-557-873-31	CORD, MICROPHONE (ONE CORE)
903	*A-4518-372-A	MOUNTED PCB, AMPLIFIER (ECM-K57)
	*A-4518-371-A	MOUNTED PCB, AMPLIFIER (ECM-Z157)

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF: μ F, PF: μ F.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:

UA...: μ A..., UPA...: μ PA...,

UPC...: μ PC, UPD...: μ PD...

(ECM-K57)

Ref. NO.	Part NO.	Description
903	*A-4518-372-A	MOUNTED PCB, AMPLIFIRE
C1	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C2	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C3	1-163-021-11	CERAMIC CHIP 0.01MF 10% 50V
C4	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V
C5	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V
C6	1-163-018-00	CERAMIC CHIP 0.0056MF 10% 50V
C7	1-163-117-00	CERAMIC CHIP 100pF 10% 50V
C8	1-124-499-11	ELECT 1MF 20% 50V
C9	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C10	1-124-432-00	ELECT 47MF 20% 4V
D1	9-988-349-01	DIODE 1SS181
D2	8-719-812-26	DIODE T1R226
Q1	8-729-271-22	TRANSISTOR 2SC2712G
R1	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W
R2	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R3	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R4	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R5	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R6	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
S1	1-572-017-11	SWITCH, SLIDE
S2	1-572-012-11	SWITCH, SLIDE (POWER)
901	X-2533-820-1	CAPSULE ASSY
902	1-557-873-31	CORD, MICROPHONE (ONE CORE)

ACCESSORY AND PAKING MATERIAL

Part NO.	Description
2-537-363-01	FRAME, INNER
2-538-747-01	BLISTER
2-538-749-11	CARDBOARD
3-750-653-11	MANUAL, INSTRUCTION

(ECM-Z157)

Ref. NO.	Part NO.	Description
903	*A-4518-371-A	MOUNTED PCB, AMPLIFIRE
C1	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C2	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C3	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C4	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C5	1-135-072-21	TANTAL CHIP 0.22MF 20% 35V
C6	1-135-072-21	TANTAL CHIP 0.22MF 20% 35V
C7	1-135-150-21	TANTAL CHIP 3.3MF 20% 6.3V
C8	1-135-072-21	TANTAL CHIP 0.22MF 20% 35V
C9	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C10	1-163-117-00	CERAMIC CHIP 100pF 10% 50V
C11	1-163-986-00	CERAMIC CHIP 0.027MF 10% 25V
C12	1-135-150-21	TANTAL CHIP 3.3MF 20% 6.3V
C13	1-163-117-00	CERAMIC CHIP 100pF 10% 50V
C14	1-135-150-21	TANTAL CHIP 3.3MF 20% 6.3V
C15	1-163-018-00	CERAMIC CHIP 0.0056MF 10% 50V
C16	1-163-117-00	CERAMIC CHIP 100pF 10% 50V
C17	1-124-499-11	ELECT 1MF 20% 50V
C18	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V
C19	1-124-432-00	ELECT 47MF 20% 4V
C20	1-124-432-00	ELECT 47MF 20% 4V
C21	1-135-070-00	TANTAL CHIP 0.1MF 20% 35V
C22	1-163-117-00	CERAMIC CHIP 100pF 10% 50V
D1	9-988-349-01	DIODE 1SS181
D2	8-719-812-26	DIODE TLR226
Q1	8-729-271-22	TRANSISTOR 2SC2712G
Q2	8-729-271-22	TRANSISTOR 2SC2712G
Q3	8-729-271-22	TRANSISTOR 2SC2712G
Q4	8-729-271-22	TRANSISTOR 2SC2712G
R1	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R2	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R3	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W
R4	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R5	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R6	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R7	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R8	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R9	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W
R10	1-216-037-00	METAL GLAZE 330 5% 1/10W
R11	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R12	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R13	1-216-107-00	METAL GLAZE 270K 5% 1/10W
R14	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R15	1-216-033-00	METAL GLAZE 220 5% 1/10W
R16	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R17	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R18	1-216-025-00	METAL GLAZE 100 5% 1/10W
RV1	1-237-119-11	RES.ADJ.METAL GLAZE 22K
RV2	1-238-652-11	RES.VAR.SLIDE(WITH SWITCH) 50K
S1	1-572-012-11	SWITCH.SLIDE (POWER)
901	X-2537-308-1	CAPSULE ASSY
902	1-557-873-31	COAD.MICROPHONE(ONE CORE)

ACCESSORY AND PAKING MATERIAL

Part NO.	Description
2-537-363-01	FRAME, INNER
2-537-365-01	BLISTER
2-537-367-01	CARDBOARD
2-539-310-01	CASE, CARRYING
3-750-652-11	MANUAL, INSTRUCTION